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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/481,451	01/11/2000	Kenneth R. Fahs	115/434	5657

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BRINKS HOFER GILSON & LIONE
P.O. BOX 10395
CHICAGO, IL 60611

EXAMINER

NGUYEN, THUKHANH T

ART UNIT	PAPER NUMBER
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1722

17

DATE MAILED: 12/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

mk-17

Office Action Summary

Application No.

09/481,451

Applicant(s)

FAHS ET AL.

Examiner

Thu Khanh T. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6,8-15 and 17-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 20, 21 and 22 are objected to under 37 CFR 1.75 as being a substantial duplicate of claims 17-19 respectively. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 17 and 19 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the pump to operate at a pressure up to 150 psi (page 5, line 22), does not reasonably provide enablement for a pump to operate at a pressure of at least 1 psi. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims. It is within the scope of an artisan to recognize that most of the pump creates a flow of material having high pressure. In order for the pump to work properly, the pump pressure has to be equal to or greater than the atmospheric pressure. The normal atmospheric pressure, or the outside atmosphere, is 1atm or 14.67 psi.

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4. Claim 18 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. On the second line from the bottom of the claim, the phrase "said manifold being removably mountable mounted adjacent said casting belt" is unclear. Clarification and/or correction are required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 3, 17, 20 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by The Japanese reference (5959,133).

The Japanese reference teaches a casting apparatus and method for forming a band of dough material. The apparatus comprises a pump (4) to convey material from an inlet (3) to a discharging port (12) under pressure, a discharge manifold (1) comprising a roller and a casting line (15); wherein the casting line positioned downstream of the discharge manifold and having a movable casting belt (14); wherein the roller (7) positioned in a perpendicular direction to the moving direction of the casting belt (14) and form a gap between the surface of the roller and the upper surface of the casting belt to form the discharge gap (12).

The method comprises the steps of driving the casting belt (14) and the roller (7) in the same direction, introducing the material under pressure by means of a screw pump (4) through an

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inlet of the manifold and disposing the material onto the casting belt, drawing the material from the chamber through the movement of the roller and the casting belt, dispensing the sheet of the material across a width of the casting belt (Fig. 2, 14), cooling the continuous sheet of material on the casting belt by exposing it to the air (see Figures 1 & 2, and the abstract).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-6, 9-15 and 17- 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driessen (4,790,242) in view of Japanese reference (59,133) and the Perry's Chemical Engineers' Handbook (pages 10-34 to 10-35).

Driessen discloses an apparatus and method for casting cheese, comprising a removable discharge manifold (11, 12, col. 2, lines 1-2), wherein the manifold having a hollow interior chamber (Fig. 5) with many inlets (49; col. 5, line 27) for receiving starting material (65), a discharge opening (15, open bottom of chamber 12), an endless casting belt (61, 68, 72) mounted downstream to the manifold wherein cheese sheet is cooled on the belt surface (col. 2, lines 23-26), a thickness control bar (18) is mounted at one side of the chamber (12) for controlling the thickness of the web material, a belt driven mechanism (71, 69) for revolving the belt.

The manifold chamber includes a top, bottom, end, upstream and downstream face plates (11, 12), wherein the bottom face open to the casting belt, the downstream face open to the

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control bar, and the top face having inlets (Fig. 12); each inlets is attached to a corresponding adjustable valve (52), and wherein the control bar (18) is set a fixed distance from the casting belt (61) and a space is formed between a surface of the control bar (18) for determine the thickness of the web material. The sheet material is cooled on the casting belt (61, col. 6, line 30-32). However, Driessen fails to disclose a roller being mounted at the downstream face of the manifold chamber, and a pump.

The Japanese reference discloses a method and apparatus for forming a dough web material, comprising an endless casting belt (14), a screw pump (4), a rotatable press roller (7) mounted to the downstream face of the manifold (1) for controlling the thickness of the sheet material, and being driven by a shaft in the same direction as the belt for the purpose of facilitating the material onto the casting belt.

The Perry's Handbook discloses that screw pumps are positive displacement pumps, and that they are well adapted for producing higher pressure rises, for example, 6.895 MPA (1000 lbf/in²). Further the screw pumps are often used when handling viscous material (see col. 2, page 10-34).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have replaced Driessen's control bar with a rotatable press roller and a screw pump as taught by the Japanese reference, because the roller is stronger and better at wear resistant than the control bar, while the screw pump would facilitate the transferring of material within the processing line under high pressure as taught by the Perry's Handbook. Further, because the roller is rotated in the same direction of the casting belt, it would increase the

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dispensing speed of sheet material being formed on the casting belt; while the control bar can only control the thickness of the formed sheet material.

9. Claims 1 and 3-6, 17 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driessen (4,790,242) in view of Swanson (4293,290) and the Japanese reference (59,133).

Driessen discloses an apparatus and method for casting cheese, comprising a removable discharge manifold (Fig. 4, 11, 12, col. 2, lines 1-2), wherein the manifold having a hollow interior chamber (Fig. 5) with many inlets (49) for receiving starting material (65), a discharge opening (15, open bottom of the chamber 12), an endless casting belt (61, 68, 72) mounted downstream to the manifold wherein the cheese sheet is cooled on the belt surface (col. 2, lines 23-26), a thickness control bar (18) is mounted at one side of the chamber (12) for controlling the thickness of the web material, a belt driven mechanism (71, 69) for revolving the belt. The manifold chamber includes a top, bottom, end, upstream and downstream face plates (11, 12), wherein the bottom face open to the casting belt, the downstream face open to the control bar, and the top face having inlets (Fig. 12); each inlets is attached to a corresponding adjustable valve (52), and wherein the control bar (18) is set a fixed distance from the casting belt (61) and a space is formed between a surface of the control bar (18) for determine the thickness of the web material. However, Driessen fails to disclose a pump and a roller.

Swanson discloses a rotary pump (10) for circulating viscous material product under high pressure, wherein the product material can be meat emulsion, chopped meat, bread dough, pizza dough, dough slurry, and processed cheese (col. 2, lines 43-51).

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It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified Driessen by providing a pump for transporting the cheese as taught by Swanson, because the pump would facilitate the transferring of material within the processing line.

The Japanese reference discloses a method and apparatus for forming a dough web material, comprising an endless casting belt (14), a rotatable press roller (7) mounted to the downstream face of the manifold (1) and being driven by a shaft in the same direction as the belt for the purpose of facilitating the material onto the casting belt.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have replaced Driessen's control bar with a rotatable press roller as taught by the Japanese reference, because the roller would be stronger and have is better at wear resistance than the control bar. When the roller is rotated in the same direction of the casting belt, the sheet material would be conveyed faster.

10. Claims 2 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driessen (4,790,242) in view of Japanese reference (59,133) as applied to claims 3-6, 9-15 and 17- 22 above, and further in view of Collins (4,815,370).

Driessen and the Japanese reference disclose an apparatus and method for forming a dough web as described above. Driessen further discloses the control bar and the cooling belt are made of metal, or stainless steel (col. 3, line 38; and col. 6, line 32). However, these references fail to disclose the roller is made of steel and having a plastic sleeve.

Collins discloses a rice pressing apparatus in which a press roller can be made of steel having a rubber sleeve in order to smooth the web material surface and to be able to change the sleeve as it worn out without replacing the roller.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified Driessen and the Japanese reference with a roller made of steel with a plastic sleeve for the purpose of smoothing the web surface and being able to change the sleeve as it worn out without replacing the roller as taught by Collins and because stainless steel is a better choice for a cheese manufacturing apparatus as disclosed by Driessen.

11. Claims 23 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Driessen ('242) and the Japanese reference ('133) as applied to claims 9-15, 19, 21 and 22 above, and further in view of Charles (4,061,794).

Driessen and the Japanese reference disclose an apparatus for forming a sheet of a molten, viscous material as described above. The Japanese reference further discloses a speed regulating means (6) for controlling the drive speed of the screw pump; thus, controlling the flow of material to the manifold. However, these references fail to disclose a regulating valve for the flow of the material.

Charles discloses an apparatus and method for forming blocks of cheese, comprising a valve (27) for controlling the feed of cheese curd in the pipe (25) under pressure (col. 3, lines 67).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the combination of Driessen and the Japanese reference by

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providing a separate valve to regulate the flow rate of the material, because when the valve is separated from the pump, it could be replaced when needed without replacing the whole pump.

12. Claims 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Driessen, the Japanese reference ('133), and Charles as applied to claims 23 and 25-27 above, and further in view of Collins (4,815,370).

Driessen and the Japanese reference disclose an apparatus and method for forming a dough web as described above. Driessen further discloses the control bar and the cooling belt are made of metal, or stainless steel (col. 3, line 38; and col. 6, line 32). However, these references fail to disclose the roller is made of steel and having a plastic sleeve.

Collins discloses a rice pressing apparatus in which a press roller can be made of steel having a rubber sleeve in order to smooth the web material surface and to be able to change the sleeve as it worn out without replacing the roller.

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have modified Driessen, the Japanese reference and Charles with a roller made of steel with a plastic sleeve for the purpose of smoothing the web surface and being able to change the sleeve as it worn out without replacing the roller as taught by Collins and because stainless steel is a better choice for cheese processing apparatus as disclosed in Driessen.

Response to Arguments

13. Applicant's arguments filed on September 26, 2002 have been fully considered but they are not persuasive.

The Applicants allege that the apparatus disclosed in the Japanese reference is not capable of discharging molten, viscous material under pressure, and that it fails to include a pump providing a pressure of at least 1psi. While it is true that the Japanese reference does not teach or suggest a certain operating pressure of the pump, it is well known in the art that the screw pump creates a lot of pressure as it transferring the material. By definition, screw pumps are positive displacement pumps, and *"are well adapted for producing higher pressure rises, for example, 6.895 MPA (1000 lbf/in²)."* The screw pumps are often used when handling viscous material. See Exhibit A attached. Because the screw pump can produce a high flow pressure, much higher than the 150 psi described in the current specification, the apparatus as disclosed in the Japanese should be capable of discharging molten, viscous material under pressure.

In regard to the 103 rejections over Driessen, Swanson and the Japanese reference, the Applicants assert that these rejections fail for a number of reasons. First, Driessen does not disclose a storage hopper. Although Driessen does not disclose a storage hopper, the cheese material still has to be supplied from some source. The pump would facilitate the transferring of material from a supply source such as the storage hopper or from an extruder to the manifold, or from the inlet to the outlet of the processing site.

14. The Applicants assert that *"a skilled artisan would not have looked to the semi-solid dough art of JP-59133 for a solution to the problem of molten material clogging or tearing, since that disclosure is directed to a completely different type of non-fluid material exhibiting completely different properties and challenges"* and that *"this unsubstantiated assertion is not sufficiently supported by any factual evidence of record."* However, it has been well known in the art that dough and cheese have close properties, that a machine is used for cheese processing

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is also useable for dough, or vice versa. Swanson discloses a high pressure pump for pumping viscous material, including bread dough, pizza dough, dough slurry, high flour content dough and processed cheese (col. 2, lines 46-51). Fager et al (5,527,551) disclose a method and apparatus for forming a continuous sheet of molten, moldable or plasticized material such as cheese, peanut butter, jellies, and noodles (which is made of dough).

15. Regarding claims 2, 8, and 24, Collins discloses a rice-pressing roller having a metal hub and a removable rubber sleeve. Driessen discloses a cheese casting apparatus, in which the parts (manifold, control bar, and conveyor belt) are made of stainless steel. Therefore, it would have been obvious to one of ordinary skill in the art to recognize that stainless steel is a preferred choice in of a casting machine in cheese manufacturing over other metal. It is further obvious to a skill artisan to provide a control roller as disclosed in the Japanese reference that is made of stainless steel and having a removable rubber sleeve, because the rubber sleeve would form a smooth surface and is replaceable when it worn out; while the stainless steel having been known to be used in a cheese processing machine.

16. The Applicants further argued that there is no support for replacing the bar with the roller. However, the Japanese reference discloses a roller for pressing the dough from the manifold onto the conveyor belt. Therefore, the roller could replace the bar as an alternative for the same purpose of pressing the material onto a casting belt. Further, because the round shape of the roller would create less friction on the material than the bar, thus, it would be more wear-resistance. When the roller is rotated in the same moving direction of the conveyor belt, it would push the material out at a moving speed of the conveyor belt. Therefore, both upper and lower surface of the formed sheet material are moving at the same speed, which is faster than a sheet

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material being pushed out at the bottom only. Also this would reduce the tearing of material between the upper and lower surface of the sheet material.

In regarding to the new added claims 20-22, even though the claims are limited to processing cheese sheet, the scope of the claims are not different from the scope of the claims 17-19. Therefore, they are duplicated claims. Claims directed to apparatus must be distinguished in terms of structure rather than function. In re Danly, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "[A]pparatus claims cover what a device is, not what a device does." Hewlett- Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990). (Emphasis in original) In regard to claim 19 and 22, it has been well known in the art that an apparatus and method for forming cheese would be able to use for other viscous material, and vise versa (Fager et al '551). Thus, by further defining the material used in the preamble, it is merely an intended use limitation having no patentable weight and does not limit the scope of the claims.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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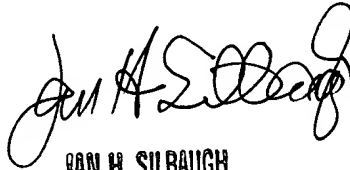
however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thu Khanh T. Nguyen whose telephone number is 703-305-7167. The examiner can normally be reached on Monday-Thursday and on alternate Friday, 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan H. Silbaugh can be reached on 703-308-3829. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

TN
November 27, 2002


JAN H. SILBAUGH
SUPERVISORY PATENT EXAMINER
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12/02/02